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Toward a New Framework for Understanding Human–Wild Animal Relations

Daniela R. Waldhorn[1]

Abstract

Most animals live in the wild and a majority probably have lives of net suffering. An increasing number of ethicists argue that humans have a duty to help them. Nevertheless, people's attitudes and perceptions toward wild animal suffering have rarely been studied. Psychology has traditionally framed the analysis of human–wild animal relations within environmental psychology, conceptualizing wild animals as merely one further component of nature. Though this approach is suitable for environmental and conservation purposes, I argue that it fails to track our attitudes toward animals as individuals with a well-being of their own. I use Kellert's framework about factors affecting attitudes toward wildlife to review and integrate existing findings in social psychology. I also suggest how other factors merit further investigation. Finally, I defend that the study of human–wild animal relations is a suitable topic of psychosocial research independently of other anthropocentric or conservationist purposes.

Keywords

anthrozoology, attitudes toward wild animals, environmental psychology, human–nonhuman animal relations, social psychology, wild animal welfare, wild animal suffering

Most nonhuman sentients in existence are wild animals living in nature (Eurogroup for Animals, 2018; Food and Agriculture Organization, 2017; Tomasik, 2018). Probably, a majority of them have lives containing more suffering than positive elements of

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[1] University of Barcelona, Barcelona, Spain

Corresponding Author:
Daniela R. Waldhorn, University of Barcelona, Gran Via de les Corts Catalanes, 585, Barcelona 08007, Spain.
Email: danielawaldhorn@gmail.com

well-being (Horta, 2015; Ng, 1995; Tomasik, 2018). One of the main causes for this the prevalent reproductive strategy in nature. It consists in maximizing genetic transmission by producing a high number of offspring. As a result, on average, only two hatchlings per parent reach sexual maturity. The rest die soon after hatching, often painfully. This form of reproduction is common among invertebrates, fishes, amphibians, reptiles, and some birds and mammals. Other sources of harm for wild animals include malnutrition, starvation, thirst, disease, parasites, physical injuries, aggressions, extreme weather, natural disasters, antagonistic relations, and distress (Faria, 2016; Horta, 2010a; Ng, 1995).

Notwithstanding the above, concern about nonhuman animals in academia and advocacy has been mostly circumscribed to animals under human control, focusing especially on the harms inflicted on them by human beings. Exploited animals, however, are only a minute fraction of the total, compared with animals living in the wild (Tomasik, 2018).

Recently, some authors have stressed the importance of the situation of wild animals for a suffering-focused ethics (Faria, 2016; Horta, 2015; McMahan, 2015; Tomasik, 2015). On this view, we certainly have a duty not to harm nonhuman animals. But we also have a duty to prevent or alleviate suffering due to natural events. According to these authors, if discrimination based on species-membership (speciesism) is rejected, animals should be helped when they are in need, regardless of the cause of their suffering. Thus, human beings should try to intervene in the wild in order to reduce naturogenic harms.

So far academic work on wild animal welfare from a nonspeciesist point of view has been mostly limited to discussions in normative applied ethics and speculations about possible future interventions. People's attitudes and perceptions toward wild animal welfare is an issue that has rarely been investigated.[1]

Yet the well-being of wild animals will increasingly depend on the willingness of humans to assist them. Human beings have now a limited capacity to do so, but the ability to intervene in natural processes will probably increase in the future, as new technologies are developed and knowledge of ecosystemic relations improves (Horta, 2016). Hence, it is necessary to understand human attitudes and behavior toward wild animals in order to discourage harmful interventions and to develop and implement positive strategies of intervening in nature.

Thus, a psychosocial approach to this topic remains to be done. In this sense, this article conducts a review of the existing knowledge on social–psychological studies and human–nonhuman animal relations relevant to this problem. Its main aim is to contribute to establishing human attitudes toward, and perception of, wild animals as a suitable topic for psychological research. This goal is considered relevant in both a theoretical and a practical sense.

In a theoretical sense, until recently, psychology has paid little attention to animals, although nonhumans play relevant roles in human societies and in human psychology (Amiot & Bastian, 2014; Herzog, 2011; Plous, 2003; Sevillano & Fiske, 2016). As the issue continues to be a relatively unexplored area of research, it may have an important potential for development and progress, backed by novel findings in the field of anthrozoology. In addition, it has been broadly argued how human–nonhuman animal relations can illuminate human intergroup relations (Costello & Hodson, 2014; Dhont, Hodson, & Leite, 2016).

In a practical sense, dealing with wild animal suffering requires an integrated understanding of an array of beliefs that idealize nature and speciesist attitudes toward intervening in the wild (Horta, 2010a). Mastering these beliefs and attitudes and their psychological basis is necessary to develop effective awareness-raising strategies on the issue and promote the implementation of already available means that can benefit animals in the wild.

This review is organized as follows. First, I will present some relevant approaches, from environmental psychology, to the study of people's responses and views of wild animals. Second, I will discuss Kellert's (1980, 1996) framework about factors affecting attitudes toward wildlife, applying it to other findings on human–nonhuman animal relations. Kellert's is the most widely employed approach for assessing people's attitudes toward wildlife, including wild animals, and benefits from a vast empirical research on the topic. Third, I will suggest other psychological mechanisms that may be relevant for further research on this topic. Broadly, although people's attitudes toward, and perception of, wild animal welfare and intervening in nature in their behalf is an underresearched issue, there is an important body of empirical evidence that must be taken into account in order to address it and open up venues for future research. Finally, I will end with some concluding remarks.

Psychology and the Human Dimensions of Wildlife

Most of the research and theorizations on beliefs, attitudes, and behaviors toward animals is circumscribed to animals under human control. Specifically, in psychology, some studies explore the relationship between humans and companion animals (e.g., Anderson, 2008; Serpell, 1995; Zawistowski, 2008). Others deal with the correlation between cruelty to companion animals and violence against humans (e.g., Arluke, Levin, Luke, & Ascione, 1999; Ascione, 2001). Additionally, there is a recent and expanding interest in the psychology of eating animals (e.g., Bastian, Loughnan, Haslam, & Radke, 2012; Joy, 2010; Loughnan, Bastian, & Haslam, 2014; Loughnan, Haslam, & Bastian, 2010).

Notably, research on human–wild animal relations has proceeded separately from these lines of research. Instead, psychology has traditionally addressed human relations with wild animals as a field of environmental psychology. Thus, the issue is considered a part of a more comprehensive field of research related to human views and relations with nature. It is specifically referred to as the study of "human dimensions of wildlife" (Jacobs, Vaske, Teel, & Manfredo, 2012).

In general, research on "human dimensions of wildlife" mainly deals with attitudes and value orientations toward wild animals (Jacobs et al., 2012). In this field, wild animals may be included as just a further component of nature, along with other nonsentient elements or abstract concepts, such as plant species and landscapes. Value orientations (networks of basic beliefs) toward wildlife usually involve what are called "environmental values" (see, e.g., Whittaker, Vaske, & Manfredo, 2006). In this sense, these studies tend to emphasize findings that may contribute to environmental management, including wildlife conservation.

In this field, sociologist Stephen Kellert is considered to be one of the most prominent authors. Kellert carried out different large-scale empirical studies on attitudes toward wildlife in American society. He categorized nine basic attitudes (also referred by the author as *values*; Kellert, 1976, 1980, 1988, 1996; Kellert & Westervelt, 1983): naturalistic, ecologistic, humanistic, moralistic, scientific, aesthetic, utilitarian,[2] dominionistic, and negativistic. Kellert (1980) found important differences among various groups of people regarding their attitudes toward wildlife. For instance, farmers scored especially high on utilitarian attitudes (primary concern for the practical and material value of animals). Similar results were detected among fishermen and women and meat hunter.

Later, the author integrated these basic values with other three factors that, jointly, would shape our attitudes toward wildlife. These other variables are as follows: perceptions of particular species, knowledge and understanding of wildlife, and human/nonhuman animal interactions (Kellert, 1994, 1996).

In 1996, Fulton, Manfredo, and Lipscomb presented a new approach to the issue at hand, where value orientations toward wildlife are explained as rooted in deeper values, conforming a "hierarchy of cognitions." The authors identified two major value orientation dimensions toward wildlife: *protection-use* and *wildlife appreciation*. The protection-use dimension refers to one's orientation toward the use of wildlife to benefit humans or, on the opposite side, toward wildlife protection. The second dimension relates to the support for wildlife-related recreation and education. These value orientations can effectively predict behavioral intentions and behaviors toward wildlife, such as predispositions to hunting, fishing, and wildlife-related recreation activities (Kellert, 1994, 1996; Manfredo, 2008; Whittaker et al., 2006).

Manfredo has developed subsequent evidences that point out that Americans would be shifting from utilitarian values toward more protectionist positions and a greater concern regarding wildlife (Manfredo, Decker, & Duda, 1998; Manfredo, Teel, & Bright, 2003; Manfredo & Zinn, 1996).

These frameworks and approaches show how values and attitudes toward wild animals and biodiversity may vary among different societies, different stakeholders, and at different times. For his part, Manfredo's contributions also emphasize that behavior, attitudes, and value orientations toward wildlife respond to broader societal and cultural factors that are usually resistant to change (Manfredo et al., 2003). In addition, these findings also highlight that values toward wildlife affect decision-making processes about wildlife management.

Nevertheless, psychological studies on wild animals seem to have inherited the priorities and aims of conservation science and environmental management. This is reasonable, given that wild animals have been mainly addressed by conservation science (Dubois & Fraser, 2013; Feber, Raebel, D'Cruze, Macdonald, & Baker, 2016). Consistently, as aforementioned, psychology has framed this issue as a part of environmental psychology. However, conservation and environmental sciences have historically stressed specific factors that are relevant for biodiversity and environmental management, neglecting animal well-being (Feber et al., 2016; Ng, 1995). Moreover, their research agendas seem to be directly influenced by economic priorities (e.g., agriculturally relevant species, species considered "pests") and practical limitations (Wilson, Dormontt, Prentis, Lowe, & Richardson, 2007).

Notwithstanding the above, the reviewed approaches, along with other findings, can help us obtain a better understanding of the complexity of human–wild animal relations. In what follows, I will elaborate which of this knowledge may be especially relevant to address this topic.

Findings Relevant to Understanding Human–Wild Animal Relations

Experts on animal ethics have speculated about different factors that may interfere with our thoughts and perceptions of wild animals and their lives in nature. Current knowledge in psychology and in anthrozoology suggests that the issue is complex and that various factors may intervene.

Kellert (1994, 1996) provides a framework for addressing our subject of study. In what follows, I will explore the four interrelated factors he suggests underlie human attitudes toward wild animals. I will discuss the existing evidence relevant to each, emphasizing those findings that might be especially important for understanding human–wild animal relations and human attitudes toward wild animal suffering.

Values and Value Orientations

Kellert (1976, 1980) developed a well-known typology of basic values toward wildlife (see section 2). This work has been regularly employed in subsequent studies on values toward wildlife and nature, and in other research on how those values might have evolved in America (e.g., Fulton et al., 1996; George, Slagle, Wilson, Moeller, & Bruskotter, 2016; Manfredo et al., 2003; Manfredo & Zinn, 1996).

In this field of research, concern for the treatment of animals has been called a "moralistic" position. In contrast with other basic values identified, this orientation closely resembles a nonspeciesist consideration of animals. "Speciesism" can be defined as "the unjustified disadvantageous consideration or treatment of those who are not classified as belonging to one or more particular species" (Horta, 2010b, p. 244). Different authors (e.g., Faria, 2016; Horta, 2010a, 2016) state that many of our attitudes toward wild animals are permeated by speciesism. Specifically, it is claimed that not to take wild animals into consideration by refusing to help them would be the result of a speciesist position.

Recently, speciesism has been addressed as a phenomenon suitable for psychological research. Empirical investigations have shown that speciesism is a stable construct that explains the differential treatment toward animals and is capable of predicting behavior (e.g., Caviola, Everett, & Faber, 2018; Dhont & Hodson, 2014).

Furthermore, other studies have shown how speciesism can predict the endorsement of negative attitudes toward ethnic out-groups. Both variables (speciesism and ethnic out-group attitudes) have a common association with social dominance orientation, defined as preference for inequality among social groups (see Sidanius & Pratto, 1999). This common root would explain the correlation between these prejudices (Dhont et al., 2016). Moreover, it has been shown that there is a significant gender disparity regarding these variables: women are less likely than men to endorse speciesist attitudes and social dominance orientation beliefs (Caviola et al., 2018; Dhont et al., 2016; Graça, Calheiros, Oliveira, & Milfont, 2018). This last finding is coherent with Kellert's conclusions about "moralistic" attitudes toward wild animals (Kellert, 1980).

Given this evidence about the role of speciesism in our relations with animals, its capacity to account for interpersonal differences and to predict behavior, as well as its relation with other prejudices, this variable should be considered in future research regarding attitudes and perception toward wild animals. In addition, Caviola et al. (2018) claim that people allocate animal species in different mental categories (e.g., "food," "entertainment"). If so, how different wild animal categorizations, such as "pest" or "charismatic wild animals," among others, may relate to speciesism is an issue that merits further research.

Knowledge of Wild Animals

According to Kellert (1994), knowledge of wildlife refers to different levels of "factual understanding, ecological knowledge, and awareness of conservation issues" (p. 44). It has been shown that people tend to know more of issues that affect larger and "cute" animals. In contrast, people are less knowledgeable about invertebrates, predators, and other topics that affect other animals or nature in general (Kellert, 1980).

Specifically on invertebrates, although they account for 99% of all animal species, science and public opinion know comparatively little about them (Kellert, 1980; Mather, 2013; Prokop, Prokop, & Tunnicliffe, 2008) and not much is known about human beliefs toward them (Wagler & Wagler, 2012).

Nonetheless, Kellert's approach mainly deals with specific knowledge pertaining to ecology and conservation science. These studies have historically paid little attention to wild animal well-being (Feber et al., 2016; Ng, 1995). From this point of view, animals are addressed as abstract groupings ("species") and as elements of a particular ecosystem. However, there is evidence that humans think differently about animals than about inanimate objects (Herzog, 2011). Thus, conservationist knowledge on wild animals may not be suitable for addressing these perceptual particularities, and it may not necessarily be relevant regarding the well-being of animals living in the wild.

Moreover, it has been shown that wildlife research may be biased in favor of mammals, birds, and cornerstone species, at the expense of less charismatic although more numerous wild animals.[3] In fact, Kellert's scale of wildlife knowledge covers all vertebrate classes, but not all invertebrates, includes items about inanimate ecosystemic elements (e.g., trees) and stresses issues relevant for conservation purposes—such as endangered species.

This inaccurate picture has helped create and reinforce a misguided representation of animals living in the wild, which contributes to disregarding issues related to wild animal well-being (Ng, 1995). In this way, whether wild animals enjoy positive or negative well-being is a problem that has not been systematically tackled.[4] And yet people usually have little or no contact at all with wild animals, and this absence of interaction may reinforce misconceptions about them and their lives (Veilleux, 2014).

Hence, the unfamiliarity and/or lack of knowledge regarding the quality of lives of individuals in the wild, along with other social myths on nature, may lead to an unrealistic conception of wild animal lives (Faria, 2016; Horta, 2010a; Tomasik, 2018). Horta (2010a) refers to this as "the idyllic view of nature": the belief that in the lives of wild animals happiness outweighs suffering. Consistently, Oswald (1995) has found an over romanticization of animals in children's novels, picturing wild animals as heroic and successfully surviving against all odds. In a study carried out in Japan, Kellert (1991) found that perception of nature is narrow, mainly restricted to an aesthetic admiration, its idealization and based on assumptions about its harmony, order, and logic.

Currently, some studies have addressed how anthropogenic harms on wild animals are socially perceived (e.g., Dubois & Fraser, 2013). For instance, it has been seen that intentional activities that cause direct harm, are illegal or occur in the terrestrial environment are more covered by the media than other harmful human interventions. By contrast, activities that do not involve an intent to harm wild animals (e.g., pollution), are legal, or occur in the marine environment do not usually appear in the media (Feber et al., 2016).

Nevertheless, wild animals are mostly affected not only by anthropogenic events but also by natural events and factors (see Faria, 2016, Horta, 2010a; Horta, 2015; Ng, 1995; Tomasik, 2015). Therefore, attitudes toward the latter should be addressed in future research as well. Further empirical investigation on people's beliefs and awareness about wild animal well-being in general is needed.

Perception of Particular Wild Animal Species

Following Kellert (1980, 1994, 1996), perception and preferences for particular species may be influenced by the presumed qualities of a species and its relations with humans. Ulterior studies confirm this tendency to value and consider animals according to specific characteristics of the species they belong to (Bonnet, Shine, & Lourdais, 2002; Herzog, 2011; Kansky, Kidd, & Knight, 2014; Serpell, 2004; Stokes, 2007).

Kellert (1980) states that some factors that may determine how an animal species is perceived are as follows: (a) size, (b) aesthetic value, (c) intelligence, (d) perceived dangerousness to humans, (e) likelihood of inflicting property damage, (f) predatory tendencies, (g) phylogenetic relatedness to humans, (h) other characteristics of the species, and (i) cultural and historical relationship with it.

Regarding species size (a), usually, the larger an animal is, the stronger the preference for it. It has been found that species that are larger in size elicit more support for their protection among the public (Gunnthorsdottir, 2001) and more efforts from nongovernmental organizations (Knegtering, Hendrickx, Van der Windt, & Uiterkamp, 2002).

Contrariwise, in general, humans tend to care less for relatively small animals (Burghardt & Herzog, 1980; Kellert, 1994; Morton, 1998). Moreover, small animals are more easily labeled as "pests" and thus, public opinion tends to be more supportive of their extermination. There is a widespread resistance to recognize mental capacities to small animals—as it happens with bees (Burghardt & Herzog, 1980). As I will discuss later regarding intelligence, downplaying a species' cognitive capacities is associated to a lower respect toward it.

About, the animal's aesthetic value (b), it must first be admitted that "beauty" is an attribute subject to personal preferences. However, considering an animal aesthetically pleasing correlates with positive attitudes toward it and even greater knowledge about it (see Burghardt & Herzog, 1980; Kellert, 1980; Knight, 2008; Stokes, 2007). These positive attitudes toward beautiful animals include greater support to protecting or rescuing them (de Pinho, Grilo, Boone, Galvin, & Snodgrass, 2014; Gunnthorsdottir, 2001). However, a species' attractiveness can also encourage keeping those animals captives in zoos for human enjoyment (Frynta, Liškova, Bultman, & Burda, 2010).

In general, it has been observed that animal beauty is linked to what Lorenz (1943) called the "cute response." This phenomenon is triggered by juvenile individuals, and refers to an instinctive attraction and nurturing concern toward animals with neotenous features—such as big heads, large eyes, and soft shapes. It is hypothesized that this phenomenon would be a wrong extrapolation of parental feelings toward human infants and may be related to our propensity to anthropomorphize animals (see also Archer & Monton, 2011; Lawrence, 1986).

Moreover, animals that are considered "disgusting" due to their morphology and/or to their habits, evoke negative attitudes and less consideration: waking anxiety, fear or revulsion, and support for their extermination (de Pinho et al., 2014; Kellert, 1993; Knight, 2008; Sevillano & Fiske, 2015). That seems to be the case of invertebrates in general, and specifically of ants, bugs, beetles, ticks, crabs, mosquitoes, fleas, moths, and spiders (Kellert, 1993; Knight, 2008). According to these authors, octopuses and cockroaches are also perceived as unattractive or disgusting animals (see also Haidt, McCauley, & Rozin, 1993). Other studies have found that snakes and mice (Haidt et al., 1993; Knight, 2008; Sevillano & Fiske, 2015), earthworms and vultures (Almeida, Fernández, & Silva, 2017) are considered revolting.

For its part, intelligence (c) is understood as the presumed capacity for reasoning, and for experiencing emotions, of an animal (Kellert, 1980). The attribution of this capacity to certain species is positively correlated with respect for these animals and a willingness to protect them. Other authors consider that perceived intelligence is a feature of a different factor: an animal's relatedness to humans (Borgi & Cirulli, 2015; Herzog, 2011). This point will be further developed below.

Of 33 different species, Driscoll (1995) found that mosquitoes were perceived as the least smart. In contrast, dolphins, chimpanzees, monkeys (Driscoll, 1995), and bears (Kellert, 1994) tend to be viewed as intelligent beings.

Consistently, different authors have shown how downplaying the mental capacities of farmed animals may be a key process that diminishes empathy and moral consideration toward those individuals, justifying their consumption (Bastian et al., 2012; Loughnan et al., 2010). This seems to be the case for wild animals as well. When they are useful to humans (e.g., trouts, lobsters, slugs—since they improve the soil), their intelligence is rated as "low" (Driscoll, 1995), probably in an attempt to justify their lesser consideration.

Regarding animals' perceived dangerousness to humans (d), this factor refers to the assumption that individuals of certain species may attack, kill humans, or transmit diseases. This seems to be the case of poisonous snakes, sharks, and grizzly bears (Burghardt & Herzog, 1980). Household insects, scorpions, and spiders are also related to danger (Burghardt & Herzog, 1980; Kellert, 1993).

Charismatic mega-carnivores are particularly referred to in the literature as threats to human safety (Peterson, Birckhead, Leong, Peterson, & Rai, 2010). Therefore, large felines—like tigers, lions, jaguars—are identified as sources of potential danger (Conforti & de Azevedo, 2003; Driscoll, 1995; Kaltenborn, Bjerke, & Nyahongo, 2006).

For their part, wolves, bears, snakes, sharks, crocodiles, and alligators are also perceived as animals that may harm humans (Almeida et al., 2017; Conover, 2001; Driscoll, 1995; Kellert, 1994, 1996; Macdonald & Service, 2007). Simultaneously, rats are viewed as disease carriers (Anand & Radhakrishna, 2017; Conover, 2001; Macdonald & Service, 2007). Thereby, when animals are considered a source of danger, they are negatively evaluated and may evoke responses like hostility or fear (Sevillano & Fiske, 2016).

However, it must be taken into account that the danger associated to certain animal species may not be real and may not correspond to the actual harm these animals can inflict on humans (Almeida et al., 2017; Anand & Radhakrishna, 2017; Herrmann et al., 2013; Sevillano & Fiske, 2016).

About the likelihood of inflicting property damage (e), it mostly refers to losses of crop or farmed animals (Peterson et al., 2010). In this sense, some animals usually identified as "conflictive" in the United States are coyotes (Browne-Nunez & Taylor, 2002; Kellert, 1980, 1985; Kellert, Black, Rush, & Bath, 1996; B. R. Mitchell, Jaeger, & Barrett, 2004). Wolves are also negatively perceived as a source of potential danger to farmed animals (Browne-Nunez & Taylor, 2002; Kellert, 1980, 1985; Kellert et al., 1996; Smith, Nielsen, & Hellgren, 2014). In Europe, similar attitudes toward wolves have been identified (Dressel, Sandström, & Ericsson, 2015).

For their part, wild herbivores such as elephants, ungulates, and primates are considered as a "threat" to agricultural crops (Anand & Radhakrishna, 2017; Kansky et al., 2014; Macdonald & Service, 2007).

Moreover, identification of predatory tendencies (f) affects our perception of wild animals, as long as they may attack farmed animals and also humans. Due to the above, large carnivores are usually associated with these conflicts (Hemson, Maclennan, Mills, Johnson, & Macdonald, 2009; Herrmann et al., 2013; Macdonald & Service, 2007; Romañach, Lindsey, & Woodroffe, 2007; Slagle, Bruskotter, Singh, & Schmidt, 2017). This negative perception of predators is closely related to support for their extermination (Slagle et al., 2017).

However, predators seem to be perceived heterogeneously. Regarding the case of wolves, and even though these animals are seen as a "threat," due to their appearance and presumed courage, they also trigger admiration (Kellert, 1985; Shelley, Treves, & Naughton, 2011; Slagle et al., 2017). Notwithstanding the above, public perception of historically stigmatized predators—such as wolves, coyotes, and sharks—might have been changing during the past years (George et al., 2016; Kellert et al., 1996).

As to phylogenetic relatedness to humans (g), this factor applies to the biological closeness of a certain species to human beings. According to Kellert (1988), after aesthetics, this variable would be the second most relevant factor when determining people's willingness to protect endangered animals species. When an animal belongs to a species phylogenetically related to humans, that animal looks more familiar, facilitating human identification with it.

By the same token, other authors (e.g., Burghardt & Herzog, 1980; Preston & de Waal, 2002) mention that much of our concern for other animals is given by "anthropomorphism": the extent to which animal characteristics and capabilities are similar to human ones. In this sense, an animal species evolutionary closeness to humans may be relevant insofar as that usually leads to perceived similarities to human beings.

Further studies highlight that phylogenetic closeness may not only refer to biological and morphological similarity but also to behavioral resemblance. Hence, relatedness to humans may include (or at least come into play alongside) various other factors that Kellert had considered separately, such as size and intelligence, among others. It may as well include reproductive strategy, parental investment, social organization, and even capacity to communicate with others (Batt, 2009; Burghardt & Herzog, 1980; Kalland, 2012).

In this manner, humans feel more attracted, more empathy, and would feel more compelled to protect those animal species that are perceived as similar to humans (Burghardt & Herzog, 1980; Hills, 1995; Plous, 1993, 2003; Stokes, 2007; Urquiza-Haas & Kotrschal, 2015). Perceived similarity even affects reactions to animal abuse—although it is recognized that other factors interfere, such as beauty and potential dangerousness (Batt, 2009; Plous, 1993, 2003). In addition, similarity to humans seems to be related to the aesthetic perception of animal species (see also Archer & Monton, 2011; Lawrence, 1986) and, at the same time, it may reinforce the effect of presumed "beauty" in predicting support for the protection of certain animals.

Given their similarities to humans, some wild animal species that are more respected than others are primates (Burghardt & Herzog, 1980; Urquiza-Haas & Kotrschal, 2015) and whales, given their social organization and communication system (Burghardt & Herzog, 1980; Kalland, 2012). Other findings have also shown consistent preference for other animals that in some way resemble humans, such as chimpanzees, elephants, owls, leopards, and langurs (Batt, 2009).

On the contrary, people would actively dislike dissimilar animals like jellyfishes, houseflies, bees, centipedes, beetles, millipedes, spiders, eels, earthworms, and pythons (Batt, 2009). Notice that most of them are invertebrates. This aversion toward invertebrates is similar to previous conclusions and other specific findings about the influence of insect appearance on attitudes toward them (Kellert, 1993; Wagler & Wagler, 2012).

Considering and treating others more favorably if they are perceived similar to us and thus, as sharing our group identity, has been widely observed among human intergroup relations (Hewstone, Rubin, & Willis, 2002; see Tajfel & Turner, 1979 and social identity theory). This in-group and out-group categorization may lead to favoring the in-group (one's own membership group) and/or derogating the out-group. Other research on prosocial behavior (Dovidio et al., 1997; Levine, Prosser, Evans, & Reicher, 2015) has arrived to similar findings and propose that when others are perceived as "similar" (in-group members), people are more willing to empathize with them and/or to provide assistance.

Consistently, regarding human–nonhuman animal relations in general, there is evidence that suggests that an emphasis on the differences between humans and animals would be at the root of our mistreatment of animals (Hodson, MacInnis, & Costello, 2014).

The above suggests that our treatment and consideration of other animals may be influenced by social categorization mechanisms, equivalent to those that operate in the prejudice toward human out-groups. As a matter of fact, recent studies have called attention to the key role of the perceived human–animal divide in intergroup biases. According to the Interspecies Model of Prejudice (see Hodson et al., 2014), the perception of high differences and distance between humans and nonhuman animals makes sense of the derogatory notion of "being less than human." This phenomenon is called "dehumanization" and can be defined as "the perception and/or belief that another person (or group) is relatively less human than the self (or ingroup)" (Hodson et al., 2014, p. 87). Research has found that devaluing animals would pave the way for the derogation of other human out-groups. That would be the case of, for example, attributing Black people fewer uniquely human (but not nonhuman) features when compared with White people, in what is called an "animalistic dehumanization" (Costello & Hodson, 2014; Hodson et al., 2014).

Furthermore, dehumanization is a well-known mechanism of moral disengagement (see Bandura, 1999, 2016). It has been argued that we morally disengage from abusive actions against farmed animals (L. Mitchell, 2011). However, moral disengagement toward wild animals is an area in need of further empirical research.

Kellert (1980, 1996) also identified the relevance of (h) other characteristics. In particular, the more unfamiliar to humans that some animal species skin texture and mode of locomotion (swimming, flying, crawling, walking) is, the less preferred those animals are. As it was suggested above, these features seem to be another expression of the factor of similarity to humans.

Finally, cultural and historical relationships (i) account for much of our perceptions, attitudes, and values toward wild animals. In the United States, for example, bears are culturally significant and have an important cultural and historical relationship to people of European and Native American heritage (Kellert, 1994).

In addition, subsequent research shows that cultural factors may lead to identifying certain animals as "charismatic species." Charismatic species are especially popular and can easily elicit empathy from public opinion (Ducarme, Luque, & Courchamp, 2013). In Western societies, that would be the case of specific "mega-fauna": tigers, lions, elephants, giraffes, leopards, pandas, cheetahs, polar bears, gray wolves, and gorillas (Courchamp et al., 2018).

According to Sevillano and Fiske (2016), cultural differences regarding how certain species of animals are socially perceived and constructed is an area in need for future research.

Human–Wild Animal Interactions

Human–wild animal interactions are usually measured as a function of the following three parameters: the utility value associated with a species, its conservation status, and "human–wildlife conflicts" (HWC; Kellert, 1994, 1996).

Regarding a species utility value, cultural practices and social norms determine how animal species are classified in different categories; generally, according to human interests and the animals' presumed utility to humans. Specifically, regarding wild animals, their perception may vary if they are classified as "game," native wildlife, exotic wildlife or "pests." For instance, when labelling a species as a "pest" people tend to accept their killing much more easily (Burghardt & Herzog, 1980).

Reinforcing Kellert's conclusions, Opotow (1993) found that the perceived utility of a species affects its moral consideration, specifically, their inclusion or not in the "scope of justice."[5] In this sense, describing a species as useful paves the way for its protection. However, if the above is not accompanied by a concern for the animal's interests, this willingness of protection may be restricted to concrete aspects of a species' conservation and not take into account the treatment due to its individual members.

As to the conservation status of species, Kellert (1980) found that the public would be outstandingly willing to accept higher costs of an energy development project in order to protect endangered species of eagles, mountain lions, trouts, crocodiles, and butterflies. In contrast, less than a majority would be willing to accept equivalent changes for the sake of plants, snakes, or spiders. Likewise, it has been found among Norwegian children and adolescents that only a few of them would desire to save insects (ants, bees, ladybirds) from extinction, despite being sentient and despite their associated ecological value (Bjerke, Odegardstuen, & Kaltenborn, 1998).

For their part, HWC appear when human and wild animals coexist, competing for various shared resources such as food, shelter, and land. From a conceptual point of view, HWC arise whenever human and wild animal interests are in conflict. Thus, in principle, it would be possible for wild animals to be the ones harmed.[6] In practice, however, HWC are often identified as such only when they are detrimental to human interests (Anand & Radhakrishna, 2017; Macdonald & Service, 2007; Peterson et al., 2010). As a result, the most common reported HWC are crops damage, farmed animals predation, damage to human buildings, and threats to human safety (due to, e.g., animal–vehicle collisions; Peterson et al., 2010).

In cases of HWC, nonpositive or negative attitudes toward wild animals usually arise among local human populations (Hemson et al., 2009; Kansky et al., 2014; Macdonald & Service, 2007). There is evidence that these negative attitudes predispose individuals to harming and even killing the animals involved (Williams, Ericsson, & Heberlein, 2002). Moreover, research shows that severe HWC predisposes against the inclusion of allegedly harmful animals in our scope of justice (Opotow, 1993).

As it was stated before, the real and *perceived* damage and/or dangerousness originated by HWC may not coincide. Additionally, the attitudes toward animal species involved in HWC are also influenced by a variety of historical and sociodemographic factors (see, e.g., Anand & Radhakrishna, 2017; Kellert et al., 1996; Romañach et al., 2007 or Shelley et al., 2011). Furthermore, HWC tolerance varies across different biogeographic regions and cultures (Kansky et al., 2014; Kellert, 1985).

Perspectives for Future Research

Besides the factors already discussed, the scale of wild animal suffering and the conditions that affect their lives may trigger other psychological mechanisms which deserve to be studied.

First, most naturogenic wild animal suffering lacks a distinguishable perpetrator. For instance, harms caused by high-reproduction rates or extreme weather. It is speculated that when learning about the suffering of animals in nature, such lack of intentionality may lead to playing down or distorting the negative experiences they suffer (Tomasik, 2017). In general, intentional harms are discerned and judged as more severe than other harms whose agency is not identified (Gray, Schein, & Ward, 2014).

To empirically explore and evaluate how lack of intentionality impacts perception of wild animal suffering, the “theory of dyadic completion” offers a fruitful framework. According to this model, we think of moral situations and perceive harms as dyads (or pairs) of victim–perpetrator (Gray et al., 2014; Gray, Young, & Waytz, 2012). It is possible that natural processes that negatively affect animals—where the intentional agent is not obvious or does not exist—may be interpreted as “psychologically incomplete” events and, thus, dismissed as ethically irrelevant, exempting humans of any moral obligation.

Second, the great number of wild animals and the seriousness of their situation may trigger a scope insensitivity response and other psychological processes related to situations in which we face mass suffering, like psychic numbing and the collapse of compassion (see Kahneman, Ritov, Schkade, Sherman, & Varian, 1999; Slovic, Zionts, Woods, Goodman, & Jinks, 2013). The literature has already pointed out the role of these latter phenomena in the consumption of farmed animals (e.g., Joy, 2010; Herzog, 2011). However, their function in perceiving and responding to wild animal suffering is uncertain and needs to be empirically addressed.

In turn, the so-called "idyllic view of nature" should also be empirically explored, identifying the beliefs that constitute this phenomenon and their prevalence. In general, other possible elements of human perception regarding wild animal suffering and intervention in nature should also be addressed.

Finally, research about our attitudes toward wild animals has been sometimes criticized for lacking a clear theoretical or conceptual approach (Manfredo, 2008). In this regard, studies on social categorization, prejudice, or prosocial behavior—usually applied to human relations—may offer fruitful theoretical frames for deepening our understanding of human–wild animal relations. For instance, the role of prejudice, including speciesism, in our perceptions of wild animals, and its capacity to predict the willingness to help animals living in the wild.

Conclusion

Until very recently, psychology had not systematically considered human–nonhuman animal relations as a field of study. In particular, people's attitudes and perception toward wild animal suffering are an underresearched topic.

Yet there is an important body of empirical evidence on psychosocial studies that may prove fertile for addressing human–wild animal relations. Kellert's framework about factors affecting attitudes toward wildlife can be fruitfully employed to integrate those findings. That is a crucial step for encouraging and guiding further research. This approach also suggests other possibly relevant factors which should be explored and empirically tested in the future.

Finally, in line with other authors (e.g., Amiot & Bastian, 2014; Sevillano & Fiske, 2016), this article distances itself from traditional psychological research on wild animals. The latter approach focuses on human interests and conceives animals as occupying an "instrumental or passive role" in human psychological processes (Amiot & Bastian, 2014, p. 30). I defend, however, that wild animals and wild animal suffering are suitable targets of psychosocial research on their own, independently of other anthropocentric or conservationist purposes.

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Notes

1. Animal Charity Evaluators (2016, 2017) conducted two studies on the support for intervention in nature in behalf of wild animals.
2. This should not be confused with utilitarianism as an ethical theory, which claims that we should always try to maximize aggregate happiness, including in our calculus the interests

of all sentient animals. In environmental psychology, however, a utilitarian attitude toward wildlife consists in valuing it only instrumentally, not for its own sake. This is the sense in which I will be employing this term.

3. Studies about mammals and birds tend to predominate in ecology and wildlife research (Bonnet et al., 2002; Mather, 2013). However, mammals are less than 0.0000001% of the animals that exist worldwide, and birds, for their part, are less than 0.00000001% of the animals living in nature (Tomasik, 2018). The overrepresentation of mammals and birds entails the underrepresentation of less popular animals, like amphibians and reptiles. This phenomenon has been called "taxonomic bias" (Bonnet et al., 2002; Wilson et al., 2007): more "popular" animal species are preferred by researchers and those studies have a greater publication success (Bonnet et al., 2002). Animals who are big, endangered, charismatic, and/or morphologically similar to humans are usually more popular (Ducarme et al., 2013; Wilson et al., 2007).
4. This should not be interpreted as a categorical statement. As Ng (1995) and Feber et al. (2016) notice, it is only during the past decades that wild animal well-being has been addressed, mainly to respond to wildlife management concerns.
5. The "scope of justice" is defined as "the boundary for fairness" or "the psychological boundary within which considerations of fairness and moral rules and values govern our conduct" (Opotow, 1993, pp. 71-72).
6. In fact, there is a wide spectrum of human–wild animal interactions that are detrimental for animal interests. That is the case, for example, of hunting or destroying habitats (Fraser & MacRae, 2011; Peterson et al., 2010).

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Author Biography

Daniela R. Waldhorn is a psychologist, holds a master's degree in developmental cooperation and a master's degree in ethics and politics. She is a PhD candidate in social psychology at the University of Barcelona.